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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/693,015	10/24/2003	William C. Phillips	1023-292US01	9353

28863 7590 01/27/2006
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EXAMINER

HELLER, TAMMIE K

ART UNIT PAPER NUMBER

3766

DATE MAILED: 01/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/693,015	Applicant(s) PHILLIPS ET AL.	
	Examiner Tammie Heller	Art Unit 3766	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9, 11-13 and 15-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 11-13 and 15-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 November 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 9/6/05; 11/4/05; 12/19/05
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. The amendment filed on November 25, 2005 has been received and considered. By this amendment, claims 1, 7, and 25 have been amended, claims 10 and 14 have previously been cancelled, claims 35 and 36 have been added, and claims 1-9, 11-13, and 15-36 are now pending in the application.

Specification

2. The Examiner acknowledges the amendment to the abstract that was submitted on November 25, 2005.

Drawings

3. The Examiner acknowledges the amendment to the drawings which was submitted on November 25, 2005.

Response to Arguments

4. Applicant's arguments filed November 25, 2005 have been fully considered but they are not persuasive.

5. Regarding claim 1, Applicant argues that Stein fails to teach that the battery bay, defined by battery contacts 77 and rear opening 86, extends at least partially into the aperture formed by antenna coil 66. Although Stein does not expressly disclose that the battery bay extends into the aperture formed by antenna coil 66, it is evident from Figure 9 that when the patient programmer 10 is fully assembled, the battery bay extends at least partially into the aperture formed by antenna coil 66. When assembled, antenna coil 66 abuts circuit board 68. The placement of batteries 76 in battery

contacts 77 within circuit board 68 will cause the battery bay to extend at least partially into the aperture formed by antenna coil 66.

6. Regarding claims 2 and 3, Applicant argues that Stein fails to teach or suggest that the battery bay is oriented such that batteries placed in the battery bay present a load to or enhance the noise immunity of the internal antenna. Further, Applicant argues that Stein does not suggest the advantages of extending the battery bay into an antenna aperture. Although Stein does not specifically discuss the placement of the batteries in such a way as to present a load to or enhance the noise immunity of the internal antenna, the placement of batteries 76 in the programmer of Stein inherently presents a load to and enhances the noise immunity of the internal antenna. As discussed in the previous Office Action, it is well known in the art that when batteries are placed within the magnetic field of an antenna, they inherently present a load to the antenna, and further enhance the noise immunity of the antenna. When the programmer is assembled as set out in Figure 9 of Stein, the batteries 76 are placed such that the battery bay extends at least partially into the aperture formed by antenna coil 66. This positioning causes the batteries to be placed within the magnetic field of antenna coil 66, and therefore the batteries present a load to and enhance the noise immunity of antenna coil 66.

7. Regarding claim 19, Applicant argues that the Stein reference fails to suggest the arrangement of the battery bay such that it is aligned substantially concentrically with the aperture formed by internal antenna 66. Applicant contends that concentric alignment of the battery bay with the aperture formed by the internal antenna is

advantageous in order to reduce the programmer size. As depicted in Figure 9, the battery bay formed by contacts 77 and battery 76 shares a common axis of symmetry with the internal antenna 66. Therefore, the Examiner takes the position that this alignment represents a “substantially concentric” alignment with the aperture.

8. Regarding claims 20 and 21, Applicant argues that Stein fails to teach or suggest that the battery bay is oriented such that batteries placed in the battery bay present a load to or enhance the noise immunity of the internal antenna. Further, Applicant argues that Stein does not suggest the advantages of extending the battery bay into an antenna aperture. Although Stein does not specifically discuss the placement of the batteries in such a way as to present a load to or enhance the noise immunity of the internal antenna, the placement of batteries 76 in the programmer of Stein inherently presents a load to and enhances the noise immunity of the internal antenna. As discussed in the previous Office Action, it is well known in the art that when batteries are placed within the magnetic field of an antenna, they inherently present a load to the antenna, and further enhance the noise immunity of the antenna. When the programmer is assembled as set out in Figure 9 of Stein, the batteries 76 are placed such that the battery bay extends at least partially into the aperture formed by antenna coil 66. This positioning causes the batteries to be placed within the magnetic field of antenna coil 66, and therefore the batteries present a load to and enhance the noise immunity of antenna coil 66.

9. Regarding claims 15 and 31, Applicant argues that there is no suggestion in Stein to construct the internal antenna 66 as a plastic frame wound with conductive

winding. As discussed in the previous Office Action, Stein remains silent as to the materials used to construct internal antenna 66. However, it is widely known in the antenna art to construct an antenna in the manner set out in claims 15 and 31. It is known in the art to loop the coil antenna around a plastic (dielectric) frame so as to form a barrier to insulate any conductors in the battery compartment. Applicant's attention is directed to U.S. Patent No. 3,683,389 to Hollis, Figure 1, where the coil/loop antennas 32 and 36 are wound on dielectric frame 28.

10. Regarding claims 16 and 32, Applicant argues that there is no suggestion in Stein to surround the plastic frame and conductive winding with copper braid shielding. As discussed in the previous Office Action, Stein remains silent as to the materials used to construct internal antenna 66. However, it is well known in the antenna art to surround a loop antenna with copper braid shielding. Applicant's attention is directed to U.S. Patent No. 2,203,517 to Beggs where shield 28 surrounds the loop antenna 3 wound on dielectric frame 27.

11. Regarding claims 5 and 23, Applicant argues that while Lebel teaches that additional circuit boards may be utilized in order to incorporate the different control electronics, Lebel and Stein both fail to disclose a second circuit board disposed over the first circuit board and Lebel merely states that additional boards may be mounted "within, on, or even in some cases external to a device housing." In paragraph 16 of Applicant's disclosure, it is explained that a "separation distance between the circuit boards may serve to reduce the effects of electrical and electromagnetic interference caused by the display on signals transmitted and received by the internal antenna."

However, Applicant fails to the specific alignment of the second circuit board disposed over the first circuit board. It is inherent that when a second circuit board is incorporated in the invention of Stein, as taught by Lebel, it will be oriented in a manner similar to the orientation of circuit board 68. Therefore, it is inherent that when a second circuit board is incorporated into the invention of Stein, that second circuit board will be disposed over the first circuit board 68 due to the similar orientation of the two boards.

12. Regarding claims 8 and 26, Applicant argues that the Stein reference teaches away from the claimed invention because the antenna coil 66 and display (indicated by indicators 26, 28, 30, and 32) are mounted on the same side of the controller. However, when a second circuit board is implemented, as taught by Lebel, which contains circuitry to control a display, such as a text-based display, Stein teaches that the arrangement of parts within the controller must be altered in order to optimize the performance of the controller (see paragraph 46, ln. 3-12). Therefore, as discussed in the previous Office Action, it would be inherent to position the antenna on the first circuit board opposite the second circuit board and position the display on the second circuit board opposite the first circuit board.

13. Regarding claims 13 and 30, Applicant argues that neither Stein or Stanton, either singularly or in combination, teach each and every feature recited in independent claims 1 and 19 and dependent claims 13 and 30. As previously discussed, Stein teaches each aspect of the Applicant's invention with regards to claims 1 and 19. Furthermore, in combination with Stanton, Stein teaches the use of an external antenna

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28 coupled to the programmer via a cable in order to increase the ease with which patients are able to perform their own programming sessions (see Figure 1).

Claim Objections

14. Applicant is advised that should claim 35 be found allowable, claim 36 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

15. Claim 36 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 36 is simply a reiteration of claim 35.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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2. Claims 1-3, 17, 35, and 36 are rejected under 35 U.S.C. 102(e) as being anticipated by Stein et al (US 2004/0230246). Stein et al. discloses the same invention including an internal antenna mounted within the programmer housing which defines an aperture (see internal antenna 66 in Figure 9). The battery bay 76 extends into the aperture formed by the antenna loop 66.

3. Regarding claims 2 and 3, a load is presented to an antenna when batteries are placed within its magnetic field. This load enhances noise immunity of the internal antenna to external electromagnetic interference. From Figure 9 of Stein et al. it is observed that the batteries are located within the magnetic field of the antenna and therefore present a load to the antenna. Therefore, the placement of the batteries in Stein et al. inherently places a load on the internal antenna in order to enhance noise immunity to external electromagnetic interference.

4. Regarding claims 35 and 36, Stein discloses in Figure 9 that the antenna 66 is mounted to circuit board 68 via the two-pronged connected located on the distal edge of antenna 66. Mounting in such a way creates a space between the antenna and the circuit board, so it is therefore inherent that this space will be substantially filled by the battery bay extending into the antenna aperture.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 4, 15-16, 19-22 and 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stein et al. Stein et al. discloses a programmer for a medical device comprising a programmer housing, a loop-shaped internal antenna which defines an aperture, and a battery bay formed within the housing which extends into the aperture formed by the antenna. However, Stein et al. does not disclose expressly that the battery bay is aligned substantially concentrically with the aperture. At the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to concentrically align the battery bay of Stein et al. with the aperture formed by the loop antenna. Applicant has not disclosed that concentrically aligning the battery bay with the aperture formed by the loop antenna provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with the battery bay non-concentrically aligned with the aperture formed by the loop antenna because a load is placed on the antenna as long as the battery bay extends at least partially into the aperture. Therefore, it would have been an obvious matter of design choice to modify the programmer of Stein et al. to obtain the invention as specified in claims 19 and 33.

7. Regarding claims 20 and 21, a load is presented to an antenna when batteries are placed within its magnetic field. This load enhances noise immunity of the internal antenna to external electromagnetic interference. From Figure 9 of Stein et al. it is observed that the batteries are located within the magnetic field of the antenna and therefore present a load to the antenna. Therefore, the placement of the batteries in

Stein et al. inherently places a load on the internal antenna in order to enhance noise immunity to external electromagnetic interference.

8. Regarding claims 4 and 22, examiner takes Official Notice that it is well known in the art to use commercially available batteries to power patient programmers so that it is not necessary for the patient to visit their physician when the batteries are low on the programmer. Therefore, it would have been obvious to one of ordinary skill in the art to modify the programmer of Stein et al. to accommodate commercially available batteries such as AAA batteries to offer an additional level of convenience to the patient.

9. Regarding claims 15 and 31, examiner takes Official Notice that it is well known in the antenna art to construct an internal antenna from a plastic frame wound with conductive winding in order to enhance the noise immunity of the antenna. The conductive winding is wound such that the direction of the helix determines the type of signal (either right or left-handed) the antenna is able to receive. The antenna consequently only receives the signals for which it is designed and noise from other sources is eliminated. Therefore, it would have been obvious to one of ordinary skill in the antenna art to construct the antenna of Stein et al. from a plastic frame wound with conductive winding in order to further increase the noise immunity of the antenna. Applicant's attention is directed to U.S. Patent No. 3,683,389 to Hollis, Figure 1, where the coil/loop antennas 32 and 36 are wound on dielectric frame 28.

10. Regarding claims 16 and 32, examiner takes Official Notice that it is well known in the antenna art to use copper-braiding as a shielding mechanism for antennas to shield the electromagnetic field of the antenna and reduce electrical and

electromagnetic interference caused by the antenna. Therefore, it would have been obvious to one of ordinary skill in the art to shield the antenna of Stein et al. using copper braiding in order to reduce electrical and electromagnetic interference and reduce antenna loading during transmission and reception. Applicant's attention is directed to U.S. Patent No. 2,203,517 to Beggs where shield 28 surrounds the loop antenna 3 wound on dielectric frame 27.

11. Claims 5-9, 11-12, 18, 23-28, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stein et al. in view of Lebel et al. (U.S. Patent No. 6,648,821). Stein et al. discloses the invention essentially as claimed, including first and second housing members and a first circuit board disposed between the two members. There is an access opening 86 in the first housing member 78 to gain access to the battery bay (see Figure 9). Additionally, the internal antenna 66 of Stein et al. is displaced from the first circuit board and coupled to the first circuit board via an antenna measurement as seen in Figure 9.

However, Stein et al. does not disclose a second circuit board disposed over the first circuit board. Lebel et al. teaches of a communication device to communicate therapy parameters to an implantable medical device which includes a number of circuit elements to control the different elements of the communication device. Lebel et al. discloses that "more or less of the control electronics may be implemented within one or more processor integrated circuits" (see Col. 41, ln. 63-67 and Col. 42, ln. 1-15). According to Lebel et al., additional circuit boards may be added to a programmer for a

medical device as is necessary in order for the programmer to perform additional functions. Therefore, it would have been obvious to one of ordinary skill in the art to incorporate an additional circuit board into the programmer of Stein et al. in order for the programmer to perform all of the functions desirable for its use.

12. Regarding claims 8 and 26, the invention is disclosed by Stein et al. in view of Lebel et al. essentially as claimed except both Stein et al. and Lebel et al. remain silent as to the configuration of the antenna and display units within the programmer. Examiner takes Official Notice that it is well known in the art to orient the antenna such that it faces toward the patient's body when the programmer is in use to ensure efficient communication between the programmer and the implantable device. Furthermore, it is well known to orient the display such that it faces away from the patient's body in order to allow the patient to observe information given on the display while the programmer is in use. Therefore, it would have been obvious to one of ordinary skill in the art to modify the antenna and display units of either Stein et al. or Lebel et al. such that the internal antenna is mounted to the first circuit board on a side opposite to the second circuit board, and the display unit is mounted to the second circuit board on a side opposite to the first circuit board in order for the antenna to efficiently communicate with the implantable device and for the patient to view the information contained on the display unit while the programmer is in use.

13. With respect to claims 9 and 27, as disclosed by Lebel et al., each of the circuit boards contained within the programmer can contain different circuitry to perform the

necessary tasks of the programmer. Additionally, Lebel et al. discloses a first circuit board coupled to a second circuit board via an electrical interface (see col. 3, ln. 8-24).

14. With respect to claims 11, 18, 28 and 34, the device of Lebel et al. can be used with implantable neural stimulators (see col. 2, ln. 29). Additionally, the telemetry circuitry of both Stein et al. and Lebel et al. transmits and processes signals via the antenna.

15. With respect to claims 12 and 29, the device of Lebel et al. has a liquid crystal display (see col. 24, ln. 63 and Figure 2, LCD display 36).

16. Claims 13 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stein et al. in view of Stanton et al. (US Patent No. 6,249,703). Stein et al. discloses the invention essentially as claimed except for the external antenna coupled to the programmer via a cable. Stanton et al. teaches the use of an external antenna 28 that is coupled to the programmer via a cable in order to increase the ease with which patients are able to perform their own programming sessions (see Figure 1). The use of an external antenna coupled to the programmer makes it possible for the programming sessions to occur when the programmer is not located on the implant site. This is desirable for a number of patients who are not able to easily reach the implant site to position the programmer. Therefore, it would have been obvious to one of ordinary skill in the art to combine the external antenna of Stanton et al. with the programmer of Stein et al. in order to increase the ease with which patients can utilize the programmer.

Conclusion

17. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent No. 2,144,310 to Hyland, U.S. Patent No. 2,147,148 to Charrier, U.S. Patent No. 2,273,955 to Grimditch, U.S. Patent No. 2,292,182 to Billiard, U.S. Patent No. 2,343,306 to Lear, U.S. Patent No. 2,624,004 to Polydoroff, and U.S. Patent No. 3,495,264 to Spears which all disclose antennas constructed in the same fashion as that of the present application.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tammie Heller whose telephone number is 571-272-1986. The examiner can normally be reached on Monday through Friday from 7am until 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert E. Pezzuto can be reached on 571-272-6996. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Robert E. Pezzuto
Supervisory Patent Examiner
Art Unit 3766

TKH